

Intestinal Toxaemias and their Pathological Significance

**Bulletin
No. 1.**

It is hoped that these brief Bulletins on Intestinal Toxaemias will attract the attention of the Medical Profession.

Many may not be in agreement with some of the views and clinical observations outlined in the text, but all should discover some food for reflection, and some incentive to individual enquiry into the means now available for the prevention or amelioration of the wide range of diseases directly traceable to an intestinal focus.

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Intestinal Toxaemias and their Pathological Significance

At the present time the interest of medical investigators throughout the world is eagerly centred upon the toxaemias, more especially upon the group of maladies associated with the absorption of bacterial products from the bowel—the so-called alimentary toxaemias.

“The extent to which intestinal toxaemia can affect the normal processes of nutrition is not a little remarkable, as revealed by the symptoms to which it gives rise. These may be enumerated as follows: Some enlargement of the thyroid, loss of appetite, menstrual irregularities, irritability of temper, varying temperature, infiltration of the skin at the back of the upper arm, a tendency (in women) to hair growth on the cheeks and chin, premature greyness of the hair, blueness of the nose and ears, lividity and clamminess of the hands and feet, feeble circulation, furred tongue, foul breath and perspiration, ‘rheumatic’ pains in muscles and joints, pallid complexion, headache, pigmentation of the skin, especially in certain areas, such as the eyelids and axilla, weariness and lassitude, inability to concentrate the mind, loss of desire for active exercise, sleeplessness, mental depression, neuralgia, acne, etc.”¹

One aim of this paper is to gather together, and present in a handy form for reference, some of the more important later evidence regarding the recognised effects of such intestinal toxaemias. At the end attention is directed to the obvious means of destroying the putrefactive organisms which produce the causative toxins.

¹Percy Dunn, *The Medical Press*, May 24th, 1922.

ANAEMIA.

"In the group of 150 cases (of septic anaemia) under my care during the thirteen years 1900 and 1913, I have used no new method of treatment other than the antiseptic treatment against gastrointestinal sepsis, which I recommended for the first time in 1890, and the measures of oral antiseptics which I recommended in 1900." HUNTER, *Brit. Med. Jour.*, March, 18, 1922, p. 425.

"In many people who have long suffered from this type of putrefaction there are distinct evidences of anaemia. . . A moderate or considerable grade of secondary anaemia may be associated with the intestinal condition. . . In some instances the grade of anaemia is intense and the patients may present the blood picture and clinical characters of a progressive pernicious anaemia." HERTER, *Bacterial Infections of the Digestive Tract*.

"It is an absolute certainty that pernicious anaemia can be produced by such small amounts of toxins as can be absorbed into the system from pyorrhoea alveolaris." BRYCE, *Intestinal Toxaemia*, p. 68.

"I believe that pernicious anaemia is caused by poisons absorbed from the intestine, where they have been produced by the action of bacteria coming originally from the mouth." HURST, *The Lancet*, June 17, 1922, p. 1221.

"Amongst the various causes of pernicious anaemia. Grawitz (Med. Rec., Oct. 29, 1910) attaches the greatest importance to intestinal intoxications." BRYCE, *Intestinal Toxaemia*, pp. 68 and 69.

ARTERIO-SCLEROSIS.

"The digestive tube is constantly elaborating poisons of microbic origin which are capable, in time, of setting up physiological arterio-sclerosis." METCHNIKOFF, *Annales de l'Institut Pasteur*, Oct., 1910.

"The vast majority of cases of arterio-sclerosis as they occur in adult life are due to the indirect influence of intestinal putrefaction upon the blood vessels and nervous tissue." BISHOP, *N.Y. Med. Jour.*, Sept. 9, 1911.

ARTHRITIS.

"Very few medical men now doubt that most forms of arthritis, including rheumatoid arthritis, are due to the absorption of some toxins, and many of these can be directly attributed to intestinal toxaemia." BRYCE, *Intestinal Toxaemia*, p. 49.

"The determining factor in the evolution of many cases of rheumatoid arthritis is infection of the upper alimentary tract with pyogenic staphylococci." MUTCH, *Amer. Med.*, June, 1915.

"Many cases of rheumatoid arthritis improve markedly under treatment directed against intestinal toxæmia, namely, the prevention of the formation, the decrease of absorption, increase in the elimination or increase in the destruction of toxins." SUTTER, *N.Y. Med. Jour.*, Feb. 24, 1912.

"Toxic absorption from the alimentary tract probably constitutes the commonest mode of origin of osteo-arthritis." *The Lancet*, July 8, 1922. p. 58.

"The condition so often described as arthriticism or the arthritic diathesis is in reality synonymous with intestinal toxæmia." BRYCE, *Intestinal Toxæmia*, p. 30.

ASTHMA.

"Many cases of asthma improve following the removal of the intestinal toxæmia. Henoch, Silberman, Oppler, Boas, Murdock, Einhorn, Combe and many others recognise a disease known as dyspeptic asthma." SUTTER, *N.Y. Med. Jour.*, Sept. 28, 1912.

"I have seen some cases of asthma improve following the removal of the intestinal toxæmia." MACK, *Illinois Med. Jour.*, Sept., 1911.

AUTO-INTOXICATION.

"It is only the other day that most of the leading physicians in Great Britain scoffed at intestinal stasis and auto-intoxication and their results. Now, on the other hand, the progressive scientific observer has recognised auto-intoxication as an important — if not, perhaps, the most important—factor in the production of diseases." ARBUTHNOT LANE, *Brit. Med. Jour.*, Nov. 1, 1913.

"I am firmly convinced that auto-intoxication is one of the most important causes, and probably the sole cause in many instances, of erythema multiforme, urticaria and similar affections, developing spontaneously in the gastro-intestinal tract or as the result of the ingestion of food products which had previously or subsequently to their ingestion undergone putrefaction or other changes, of which constipation is often an important contributory factor." STELWAGON, *Diseases of the Skin*, p. 80.

BLOOD PRESSURE.

"With evidence of general chronic disturbance we should not be satisfied with the diagnosis of constipation. Intestinal stasis may lead to enterogenous toxæmia that will raise the blood pressure, irritate the kidneys, congest the liver, irritate the brain and cause sleeplessness and future organic disease." *Jour. Amer. Med. Assn.*, April 24, 1915, p. 1400.

"It would simplify the discussion of this subject were observers to deal with it more from the aspect of a symptom than a disease. By doing so a higher degree of importance would be attributed to facts, while speculation would be relegated to its proper plane. All the facts favour, *ab initio*, the relationship of high blood pressure to intestinal toxæmia, and intestinal disinfection as the means for treating it." *The Medical Press*, May 2, 1923.

CANCER.

"When stasis is recognised by medical practitioners in its early stages and rectified, there will be far less cancer, not only of the stomach and large intestines, but also of the bile ducts and of the breasts." BEVERIDGE, *N.Y. Med. Jour.*, August 21, 1915.

"Lane's suggestion that cancer may be the result of intestinal stasis need not be regarded as Utopian. . . I consider the evidence is more than presumptive. It appears to me that the most probable causative factor is the disturbance of metabolism occasioned by the absorption of toxins naturally formed in the intestinal canal." BRYCE, *Intestinal Toxæmia*, pp. 100 and 102.

"Cancer never affects a healthy organ. In every case in which I have had an opportunity of verifying it I have found that the cancer patient was suffering from chronic intestinal stasis, and that the infection by cancer was an indirect consequence of this condition. Cancers of the skin and tongue which are produced by chronic traumatism alone are not included in this category." ARBUTHNOT LANE, *Brit. Med. Jour.*, Jan. 26, 1924, p. 144.

CIRRHOSIS.

"Many patients are not alcoholic, and we must therefore search elsewhere for the cause of cirrhosis. This cause appears to exist in the poisons present throughout the entire length of the gastro-intestinal tract. In some circumstances they become the source of auto-infection, reacting directly upon the liver. . . There is bivenous, hypertrophic cirrhosis due to auto-intoxication of gastro-intestinal origin." DIEULAFOY, *Text-book of Medicine*, vol. I., p. 904.

CONSTIPATION.

"In connection with stagnation of the bowel contents, there is a factor in its production which seems to have been overlooked. . . There is much to be said in favour of the suggestion made by Percy Dunn (*The Medical Press*, May 24, 1922), that the toxins may act directly by paralysing the nerve cells which in a state of health stimulate the muscles controlling the peristaltic action." *Paris Médical*, March 31, 1923.

"It was probably the obvious fact that some men are physically older than others who have lived as many years, that directed attention to the study of the physical causes of senility. Faecal matter collects in the large bowel and is retained beyond the normal period, and decomposition goes on unchecked; toxins are developed which are absorbed into the blood. . . Here we have an adequate general cause, one whose presence and capability of inducing the first lesions are not questioned." WAUGH, *Med. Record*, Sept. 23, 1911.

DIABETES.

"I am absolutely convinced that this condition (auto-intoxication co-existing with diabetes) is caused by a protein toxin, or toxins, formed in the intestinal tract, or possibly in the entire alimentary system, which interferes with the proper function of the liver and pancreas, and possibly all the organs having an internal secretion, and also has some bearing on the proper combustion of the sugars." HOROWITZ, *N.Y. Med. Jour.*, August 8 and 15, 1914.

ECLAMPSIA.

"It is now well known that puerperal eclampsia is produced by a toxin; and although the evidence at our disposal is by no means complete, there is little doubt that the toxæmia is of intestinal origin." BRYCE, *Intestinal Toxaemia*, p. 32.

"Since prevention is better than cure, the time to adopt measures for dealing with the toxæmia is when the warning sign of a rising blood-pressure indicates that the pregnancy is about to pursue an abnormal course. . . Rational treatment should call for the destruction of the pathogenic organisms *in situ*, either at the outset of the symptoms, or better still, as a prophylactic measure through the last two or three months of term." *The Medical Press*, Sept. 6, 1922.

EPILEPSY.

"There is no question in my mind about the influence of auto-intoxication, not only in epilepsy, but in all forms of mental disturbances, not excepting paranoia." HILL, *Trans. Amer. Medico-Psychol. Assn.*, 1905.

"The relationship between chronic disturbances of the intestinal digestion and convulsive seizures cannot be too strongly emphasised. It is almost criminal to assume that, because a child has had a series of convulsive seizures lasting over a period of months or even a year, it is necessarily epileptic. Such an assumption is a most liberal contribution to the *production* of epilepsy. The frequency

with which it can be traced to these chronic conditions of the intestinal tract will be surprising and enlightening." HAMILL AND BLACKFAN, *Jour. Amer. Med. Assn.*, Dec. 24, 1910.

"Epilepsy, without question, may be in some cases directly attributed to auto-intoxication from the digestive tract. . . Many nervous conditions, neurasthenia, mental depression, and melancholia, can be imputed to auto-intoxication. . . Mental depression often accompanies or is a symptom of toxaemia, and this condition may even progress to depressive insanity." KEMP, *Trans. Amer. Medico-Psychol. Assn.*, 1905.

"Epileptiform tic is not infrequently the result of intestinal stasis . . . headache is a very frequent feature, and may render the patient's life unendurable. One of the most serious symptoms which result from the damage of the nervous tissues by toxins is the want of control over the temper, which makes the sufferer very difficult to live with, and leads to misery and crime " ARBUTHNOT LANE, *Brit. Med. Jour.*, Nov. 1, 1913.

EYE-SYMPTOMS.

"Many disorders of the eye are caused by faulty digestion and can be remedied only by treatment of the digestive tract. . . I could present a long list of cases in my own practice, in which auto-intoxication was the cause of eye-symptoms." HILGARTNER, *Texas State Jour. of Med.*, Jan., 1913.

"The main object of this paper is to emphasise the importance of the relationship of intestinal toxaemia to ocular disease. . . In the case of toxaemia arising from intestinal stasis the most scientific method of treatment must obviously be the sterilisation of the putrefactive organisms in the intestines." PERCY DUNN, *The Lancet*, 1923, I., 696.

"Those diseases of the eye which are degenerative in origin are produced by, and vary with, the degree of auto-intoxication." ARBUTHNOT LANE, *Brit. Med. Jour.*, Nov. 1, 1913.

GOITRE.

"If intestinal infection has the importance I attribute to it, then two things should be possible: (1) goitre should be curable by the administration of gastro-intestinal antiseptics; and (2) goitre should be preventable by preventing such intestinal infection." McCARRISON, *Brit. Med. Jour.*, June 7, 1924, p. 992.

"That introduction of bacteria into the digestive tract is an important factor, if not the primary cause of endemic goitre, is fairly well established. As to how the organisms act in the host, there is no definite evidence. That the bacterial flora in the

digestive tract may sufficiently interfere with the absorption of the small amount of iodine available in the diet is a possibility, particularly in areas in which this element is relatively small. The relation of the bacterial flora to the available iodine would explain the geographical distribution of goitre." PLUMMER, *Brit. Med. Jour.*, Feb. 4, 1922, p. 180.

HEADACHE.

"Constipation is regarded by some observers as the point of origin of the majority of cases, the headache being symptomatic of a bowel toxæmia. It may well be that the circulating toxins are brought into close and prolonged contact with nerve centres rendered hyperæmic by functional or pathological stress." WALSH, *The Medical Press*, August 2, 1922.

"I have found that about 95 per cent. of all cases of temporal headaches are of intestinal origin." MACK, *Illinois Med. Jour.*, Sept., 1911.

HYPOTHYROIDISM.

"Hypothyroidism is one of the most prominent manifestations of intestinal toxæmia. It may therefore be argued that if this form of toxæmia be controlled by intestinal disinfection the demand upon the functional activity of the gland would cease to be excessive and the incidence of hypothyroidism would be prevented." *The Medical Press*, Dec. 6, 1922.

"There seems to be some close connection between endocrine insufficiency and poisoning from intestinal absorption, and the results of using intestinal disinfectants in addition to aperients are rather striking." SADLER, *The Lancet*, 1922, vol. I., p. 929.

"As regards the mechanics involved, is it not reasonable to assume that one of the functions of the thyroid is to neutralise or destroy the toxic substances of intestinal putrefaction, and that, according as the volume of toxin increases or decreases, so will the thyroid continue to function?" *Paris Médical*, Mar. 31, 1923.

"As we have affirmed, the most important function of the thyroid is to supply the blood with its iodine content; also it is impossible to deny that the bactericidal action of the iodine is intended to keep under control the putrescent sources in the body. These are mostly of intestinal origin, and the greater their activity the greater becomes the demand upon the efficiency of the thyroid. But, in contending against this demand, the thyroid may fail in its action to check the pervading toxæmia. Hypothyroidism follows, and with it the many and varied effects associated with blood-contamination. Obviously, in all such cases, the first line of defence is intestinal disinfection." *La Clinique*, September, 1923.

LIVER TROUBLE.

"Rísquez accepts the dictum that many pathological conditions in the liver, kidneys, and other organs, and in the nervous system, are merely the effect of toxic action from substances generated in the digestive tract. If the production of toxins continues, the gravest consequences may ensue. . . He thinks the time is coming when auto-intoxication will be held responsible for nearly all the ills that flesh is heir to, as it throws open the portals to the micro-organisms that cause the special diseases." *Gaceta Med. de Caracas*, April 30, 1921.

MENTAL DISORDERS.

"It is not incredible to believe that a very small amount of the toxæmia from chronic sepsis should produce serious damage to the cerebral cortex, and result in a profound mental disturbance. . . We have produced evidence, both clinical and pathological, which should set at rest any doubts as to the accuracy of our deductions. The fact that many individuals harbour chronic sepsis and are not insane is no argument against the doctrine that chronic sepsis can cause insanity." COTTON, *Journal of Mental Science*, Oct., 1923.

"Nearly all persons who suffer from dementia præcox have a four to five days' intestinal stasis, which adds all the horrors of intestinal putrefactive intoxication to those of chronic intestinal neurotoxic infections. . . Whilst Cotton obtained his good results in dementia præcox chiefly by resorting to colectomy, I hold that such surgical measures are as a rule unnecessary, as I have devised other measures that are perfectly effective for the correction of intestinal stasis. . . I believe that most cases taken in hand at an early stage can be returned to their homes fit to earn their own livelihood." FORD ROBERTSON, *Jour. Mental Science*, Oct., 1923.

NEUROSES.

"Unquestionably, certain cardiac neuroses, such as palpitation, tachycardia and various forms of arrhythmia, may owe their origin to toxic absorption from the intestinal tract." ANDERS, *Archives of Diagnosis*, April 1, 1909.

OBSTETRICS and GYNAECOLOGY.

"I do not think we can exaggerate the importance in gynaecological operations of pre-operative and post-operative attention to the disinfection of the whole digestive tract." MACNAUGHTON-JONES, *Brit. Gynaecol. Jour.*, 1905.

"The point which chiefly calls for notice is the influence which contaminated placental blood may have upon the more highly organised foetal tissues, such as the brain. For example, 'Sporadic cretinism,' says McCarrison (*The Thyroid Gland in Health and Disease*), 'is due to toxic agencies acting through the maternal blood, other than the specific excitants of goitre. . . The central nervous system is peculiarly prone to the attacks of these toxins, such as idiopathic epilepsy and certain psychoses. Some of the manifold varieties of intestinal toxins may be of high importance in this regard—so it is that all treatment of sub-thyroidic states should include at the same time antitoxic and antiseptic treatment of the gastro-intestinal tract.'" *La Clinique*, September, 1923.

PYORRHOEA.

"Langenhagen of Plombières regards pyorrhoea alveolaris as a secondary manifestation of mucous colitis, which is directly due to intestinal stasis." BRYCE, *Intestinal Toxaemia*, p. 90.

"In the treatment of pyorrhoea alveolaris, unless intestinal sepsis is treated at the same time *and overcome*, no local treatment of the dentist is more than palliative." GARNETT-ELLIS, *The New Statesman*, May 31st, 1924.

"It is my practice in all cases where marked pyorrhoea is present to investigate as fully as possible the condition of the whole alimentary tract." *The Lancet*, July 8, 1922, p. 58.

"Most medical men never hesitate to associate pyorrhoea alveolaris with the causation of rheumatism, but it is now well recognised that this disorder can originate from colitis, which is a direct result of chronic intestinal stasis." BRYCE, *Intestinal Toxaemia*, p. 50.

RHINITIS AND RHINORRHOEA.

"It is difficult to convince patients who suffer from rhinitis that the cause is an auto-toxaemia due to disorders of the lower colon, and this is especially so in cases complicated with gouty joints and so-called 'rheumatoid' indications. . . To cure rhinorrhoea find the cause; it is often due to auto-toxaemia from intestinal trouble; treat this condition and the usual symptoms will subside." WYLIE, *The Medical Press*, June 18, 1924.

SKIN DISEASES.

"Auto-intoxication plays a very important role in the aetiology of skin diseases. . . Hyperidrosis, or excessive sweating, may be caused by toxins from an auto-intoxication disturbing the function

of the sympathetic or the affected region. The same may be said of bromidrosis (odorous perspiration), which is closely allied." DILLINGHAM, *N.Y. Poly-clinic*, 1909.

"Symptoms that result directly from auto-intoxication: degenerative changes in the skin associated with alteration in its texture and colour, the development of pigmentation, especially in certain localities, and a more or less offensive character of the perspiration." ARBUTHNOT LANE, *Brit. Med. Jour.*, Nov. 1, 1913.

STASIS.

"Lane's disease, or chronic intestinal stasis, is a remarkably frequent condition. A large number of cases of nervous disease, arthritis and migraine are due to this cause. Numerous morbid processes, including tuberculosis, cancer and rheumatism, are aggravated by it, and many acute diseases are only grave or fatal because they develop in persons who are the subjects of chronic intestinal stasis. The cause of the disease is habitual constipation, which is the consequence of a slight congenital narrowing of the rectum as the result of a band of haemorrhoids, or of bad habits developed in childhood. Chronic intestinal stasis, however, is not synonymous with habitual constipation. In most constipated subjects the stasis is situated in the rectum or sigmoid, and does not give rise to symptoms of absorption. In Lane's disease, on the other hand, the delay in transit occurs higher up, such as the last part of the ileum, the caecum, or ascending colon. The faeces, which are still fluid in these situations, are easily absorbed, and symptoms of chronic toxæmia develop." PAUCHET, *Arch. Med. Belg.*, Sept., 1921.

"There is a gradually extending belief that auto-intoxication arising from intestinal stasis is closely identified as a factor in the incidence of malignant disease." PERCY DUNN, *The Medical Press*, April 5, 1922.

"I have very clear evidence of the fact that those who develop such diseases as are mentioned in the following list have suffered for some time from chronic intestinal stasis: non-specific arteritis obliterans, angina pectoris, rheumatoid arthritis, Still's disease, tubercle, exophthalmic goitre, adenoma of the thyroid, Addison's disease, Raynaud's disease, diabetes, ulcerative colitis, microbic cyanosis, dementia præcox, pernicious anaemia, disseminated sclerosis, paralysis agitans, infective endocarditis, and in many instances alcoholism and the drug habit, and numerous forms of skin disease." ARBUTHNOT LANE, *The Lancet*. Dec. 20 1919

This is a long and formidable but by no means exhaustive list: still, the foregoing extracts provide a synopsis sufficient to suggest and to emphasise the clamant need for an efficient intestinal bactericide that shall be sufficiently powerful and yet absolutely non-toxic as regards the host. Professor W. E. Dixon has summed up the position in these words:—

“Nothing is more wanted in medicine than a *trustworthy* bacteride for the alimentary canal.”¹

It is now widely known that such a bactericide has been found, and that the problem of intestinal disinfection has been solved by the introduction of the new benzene derivative Dimol.

The use of intestinal disinfectants has been justly discredited owing to the fact that, hitherto, it has been impossible to administer anything which was at once efficient and non-toxic. Take the case of Salol—the best hitherto available. The dose is 5 grains—more is unsafe; dissolve this in a quart of water (the average residual fluid of the intestinal tract of an adult), and you get a solution which is too weak to destroy even the most attenuated organisms. Compare this with Dimol. The dose recommended is 2 to 4 pulverettes—say 3. Each pulverette contains 1 gr. Dimol, and Dimol is 35 times more efficient as a bactericide than Phenol, the active principle of Salol (see Rideal-Walker test); that is to say, in administering 3 Dimol pulverettes, the patient is receiving the *bactericidal equivalent* of 105 grains of pure Phenol. Moreover, it is not absorbed, being voided with the faeces after doing its work. When we are able to repeat this dosage four or five times a day without affecting the appetite or digestion, and without action on the mucosa, we can readily understand the excellent results which are obtained by the administration of Dimol in the treatment of putrefactive and other bacterial invasions of the intestinal tract.

A convincing accumulation of clinical evidence is at the service of any practitioner on application to the Dimol Laboratories.

¹ *The Practitioner*, May, 1922, p. 313.

**Extract from "The N.Y. Medical Journal and Medical Record,"
April 18, 1923.**

"Thanks to the long and patient research work of Ainslie Walker, intestinal disinfection is now an established fact. By the introduction of dimethylomethoxyphenol, the putrefactive organisms are destroyed and the *Bacillus coli*, owing to their greater powers of resistance under the changed environment, are enabled to cast off their pathogenic virulence and resume their normal character. The significance of this addition to our therapeutic resources suggests the beginning of a new era in the treatment of disease; the fact that the poison trap of the intestines can now be brought under control may prove to be the solution of many hitherto undetermined pathological. . . problems."

Extract from "The Lancet," April 9, 1921.

"The claims made for this new intestinal disinfectant are put forward on the favourable clinical experience of specialists in this country and in the United States. . . It is possible to destroy all bacteria in the fluid contents of the intestinal tract with a duodenal douche of dimol, but the dosage recommended in the form of tablets or pulverettes (2 to 4 after each meal) is so regulated that the *B. coli* normally present are not affected, a fact which can only be ascribed to their greater powers of resistance. In this way all apprehension of digestive disturbance by its administration is avoided. The chemical constitution of dimol, $C_6H_2(CH_3)_2(OCH_3)OH$, reveals the presence of a phenyl radical, but this is not split off in its passage through the intestine; in other words, dimol is voided with the faeces, unchanged. Examination for phenol in the urine after a week's course of treatment gives a negative result. Tests made for us confirm a co-efficient of 35.0 and the freedom from toxicity claimed by the manufacturers."

**BACTERIOLOGICAL TEST
(RIDEAL-WALKER METHOD).**

Sample.	Organism.	Coefficient.
Salol	<i>B. typhosus</i>	0.5
Phenol	do.	1.0
Dimol	do.	35.0

Detailed tests showing how the above results are obtained will be forwarded on application.

